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Retraction

Retracted: Art Design of Ceramic Sculpture Based on 3D Printing Technology and Electrochemistry

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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[1] J. Zhu and W. Liu, "Art Design of Ceramic Sculpture Based on 3D Printing Technology and Electrochemistry," *Journal of Chemistry*, vol. 2022, Article ID 3190499, 9 pages, 2022.

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Research Article

Art Design of Ceramic Sculpture Based on 3D Printing Technology and Electrochemistry

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In order to solve the artistic design of ceramic sculpture, we proposed a method based on 3D printing technology for ceramic sculpture. First, using ANSYS ICEMCFD simulation software, we verified the effectiveness of the ceramic sculpture design method based on 3D printing technology in this study. Second, the design method of this study is recorded as the experimental group A. The two traditional design methods are recorded as experimental group B and experimental group C, respectively. Finally, we determined and compared the effect, size error, and precision error of the three groups of design methods to design the product. Ceramic sculptures are designed by proving the design method, high pattern definition, and small surface precision error. In the three directions of *x*-axis, *y*-axis, and *z*-axis, the relative size error generated is small, and the error is maintained below 1.0, and the effect of the finished product is consistent. So, the surface roughness of the ceramic sculpture designed this time is low, which will not affect the dimensional accuracy of the ceramic sculpture.

1. Introduction

3D printing, commonly known as additive manufacturing, is the process of 3D printing by a computer-controlled printer. First, build a model of the part data to be printed. It is decomposed into several plane data, and then, the print head of the 3D printer is controlled by the computer, using rollers to spread powder or other technology. Powder materials such as metals or ceramics are sintered into flat shapes according to flat data, turning multidimensional manufacturing into a bottom-up two-dimensional layer-by-layer process, thereby forming a multidimensional solid object. 3D printing technology combines cutting-edge technologies in many fields such as digital modeling, material technology, and information collection, it has profoundly changed the process and method of object manufacturing and is known as “the most iconic production tool of the third industrial revolution,” which has attracted more and more attention at home and abroad [1].

3D printing uses traditional 3D software to shape the 3D data of the design draft and then print the three-dimensional data through a 3D printer, and the model of the three-dimensional data can be quickly converted into a solid template. The shape of the product is designed through the computer, as shown in Figure 1. This not only saves a lot of cost and time but also provides convenient modifiability, experimentation, and creativity to produce ceramic models. It has a great impetus for the future development of the industry. However, due to the limitations of current printing materials and cost calculation considerations, generally, the design of ceramic modeling is completed through printed metal or resin models, combined with traditional reproduction and casting techniques, the shaped gypsum mold is used for grouting, and finally, the shape design of the ceramic is completed.

2. Literature Review

In today’s rapid technological development, 3D printing and virtual reality technology rely on its own efficient and convenient characteristics, and it has penetrated into all fields of all walks of life. It is playing an increasingly

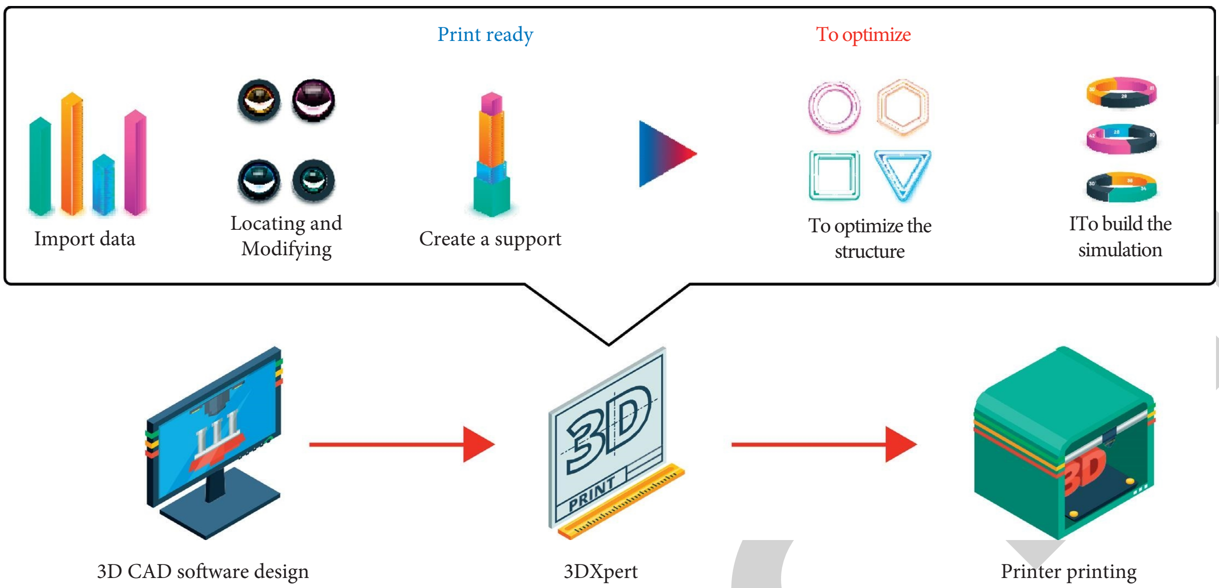

Figure 1: 3D printing.

important role in the manufacturing sector. With the accelerated development of urbanization, the demand for ceramic sculpture as a spiritual carrier is increasing day by day. At this time, the existing technical means are too single. By analyzing the status of virtual reality technology and 3D printing technology and comparing the old and new manufacturing methods, it aims to establish a digital intelligent sculpture system, combined with specific cases, it demonstrates the rationality and effectiveness of new technologies in the design and manufacture of ceramic sculptures.

3D printing technology has been developed abroad for a long time; it has been gradually applied in various fields of the manufacturing industry. At present, the widely used materials on the market are mainly polymer resins and metals, such as aerospace composite materials mainly printed with thermoplastic/short fiber materials. This stable network cross-linked polymer has been widely used in many parts of aerospace optical remote sensors. The material products prepared by 3D printing have the advantages of light weight and high strength, realizing the integration of concept design, technical verification, and manufacturing. It greatly shortens the manufacturing time and saves materials, and the printed parts with complex shapes can be directly used for the assembly and repair of the whole machine, convenient. Du, J. et al. showed that the traditional microfluidic chip manufacturing technology is a labor-intensive industry, which is not conducive to the rapid iteration and rapid manufacturing of chip design in the laboratory [2]. Lin, C. et al. first proposed that the basic idea is applicable to almost all 3D printing methods, the main process is to first use the CAD method to slice and divide complex three-dimensional components, convert it into computer-recognized code instructions, and then print the ceramic powder to be molded into a solid unit with the help of an output device [3]. Pinargote, N. et al. took the lead in proposing water-based colloidal slurry to prepare three-dimensional functional ceramics. The advantage of this type of paste is that the viscoelasticity can be regulated over multiple orders of magnitude, and lines with patterns and spans can be formed [4]. Zhao, B. et al. first used polyetherimide- (PEI-) coated monodisperse SiO2 microspheres with a diameter of 1.17 μm as the raw material. A suspension was prepared by dispersing it in deionized water [5]. Zheng, D. first proposed to combine the photocuring molding technology with the preparation process of ceramic materials, and the material used in the photocuring molding technology is a slurry composed of photosensitive resin and ceramic powder [6]. Li, P. et al. fabricated high-performance porous β-TCP bone tissue engineering scaffolds by 3D printing technology [7]. Zou, Q. et al. prepared manganese-tricalcium phosphate (Mn-TCP) bioceramic scaffolds with ordered macroporous structure by 3D printing method [8]. Yan, J. et al. prepared ZrO2–Al2O3 ceramic samples by SLM technology, the density of ZrO2–Al2O3 ceramic samples can reach 100% without sintering and posttreatment, the bending strength is 500 MPa, and there is no crack [9]. Shi, L. et al. used the organic polymer precursor polycarbosilane to crack to prepare SiC ceramic fibers, creating a precedent for the preparation of ceramics and composite materials by the transformation of precursors [10]. Zhang, L. et al. used conventional light curing technology (SLA) to obtain polymer ceramic precursors, and thermal cracking transformed the ceramic precursors into ceramic parts [11]. Cho, S. N. et al. studied in detail the effects of dispersant, diluent concentration, and other factors on the viscosity of ceramic slurry and determined the optimal component content, a new water-based ceramic slurry based on silica sol was successfully developed, and a silica ceramic slurry with a solid content of up to 50% was prepared [12].

On the basis of the current research, the author proposes a ceramic sculpture based on 3D printing technology, the designed ceramic sculpture has high pattern definition and small surface precision error, the resulting relative size error is small, and the error is maintained below 1.0, which is consistent with the effect of the finished product. Therefore, the surface roughness of the ceramic sculpture designed this time is low, which will not affect the dimensional accuracy of the ceramic sculpture.

3. Ceramic Sculpture Art Design Based on 3D Printing Technology

3.1. 3D Printing Technology Background. 3D printing is a process of creating three-dimensional objects by adequately preparing materials, where diagonal shapes are designed. This printing technique has an often-used term called "rapid prototyping," so this formulation technique uses several layers of sediment material to construct a 3D model. The different shapes and forms of objects are created by additively processing the sequence of different materials, one layer on top of the other. The process begins by creating a virtual object with 3D modeling software, or a replica object with a 3D scanner. After years of exploration and development, 3D printing technology has made great progress; at present, it has been able to achieve a fine resolution of 600dpi on a single layer thickness of 0.01 mm. At present, the most advanced products in the world can achieve a vertical rate of 25 mm thickness per hour and can achieve 24-bit color printing [13]. 3D printers use different methods. Significant differences manifest in the way one layer is applied to another. The American Society for Testing and Materials (ASTM) defines the technical procedures for seven different additives, stereolithography, material jetting, adhesive jetting, material extrusion, powder layer fusion, sheet lamination, direct energy deposition, which enables it to create 3D objects. 3D technology is suitable for printing different 3D objects; therefore, it can also be successfully used to print communication tools for the blind and visually impaired, such as Braille and 3D maps. Until recently, Braille was mainly printed in relief, less by screen printing and other printing techniques. Today, 3D printing technology is becoming more and more popular, not only for printing Braille but also for printing tactile objects, maps, and floor plans.

3.2. Ceramic Sculpture

3.2.1. Basic Type. There are various types and forms of ceramic sculptures, which can be classified from multiple angles. There are the following two main classifications (see Figure 2). In these two categories, decorative sculpture and garden sculpture are the most commonly used creation methods by designers [14].

(1) Decorative Sculpture. It is an artistic creation of decorating and beautifying buildings that follows the general layout of the building but has its own specific content. Decorative sculptures can be divided into folk sculptures, decorative sculptures, religious sculptures, monument sculptures, and functional sculptures according to their different functions. With its diverse forms and shapes, it perfectly plays the role of beautifying the urban environment and enriching people's culture, such as the sculptures in front of the gymnasium and those designed around the building. It can express a wide range of themes and flexible forms, such as characters, animals, ancient myths, and legends. It is characterized by the small scale of sculpture, which can enrich people's spiritual and cultural world while beautifying the surrounding environment.

3.2.2. The Production Process of Traditional Sculpture

(1) Project production is an important means for works to convey ideas and information exchange to people, everyone has a different understanding of a real object, and designers need to express their creative intentions to partners through scheme design and determine the style, shape, texture, material, and layout. Of the work according to the scheme information, the advantage is that it can greatly reduce the probability of rework in the later stage [15].

(2) A sculpture is a three-dimensional form of art. In addition to its beauty, the safety of its structure should also be considered. This link is difficult to fully demonstrate on the two-dimensional drawings, and it is necessary to make a three-dimensional sketch model. The production of the draft is mainly on the premise of respecting the first draft, fully considering the feasibility of processing and the rationality of the structure, recreating from the three-dimensional structure and artistic form.

(3) Building the inner skeleton and making the skeleton is one of the key steps in making a sculpture. It can determine the dynamics of the sculpture, support the inner structure of the sculpture and the mud on the surface, for large sculptures, and reduce its own weight and save materials. In the selection of skeleton materials, there are mainly wood and metal (lead wire, iron nails, steel bars, etc.), and titanium alloy materials can be selected if funds allow.

(4) On the big clay, the enlargement of the clay sculpture occurs after the original small draft is finalized. The works are made according to the actual size. The whole sculpture is shaped from the inside to the outside. The enlarged clay sculpture should be consistent with the small draft [16].

(5) Regarding the in-depth shaping, after the large shape is determined, the designer needs to carry out in-depth characterization, starting from the depiction of local details to the whole sculpture, repeated observation, and modification. The designer adjusts the relationship of each part until the final molding and prepares for the next step of reproducing the mold.

(6) Regarding sculpture overturning, clay sculpture needs to be stored for a long time after it is completed, which requires the work to be turned into a more rigid material. This requires the use of

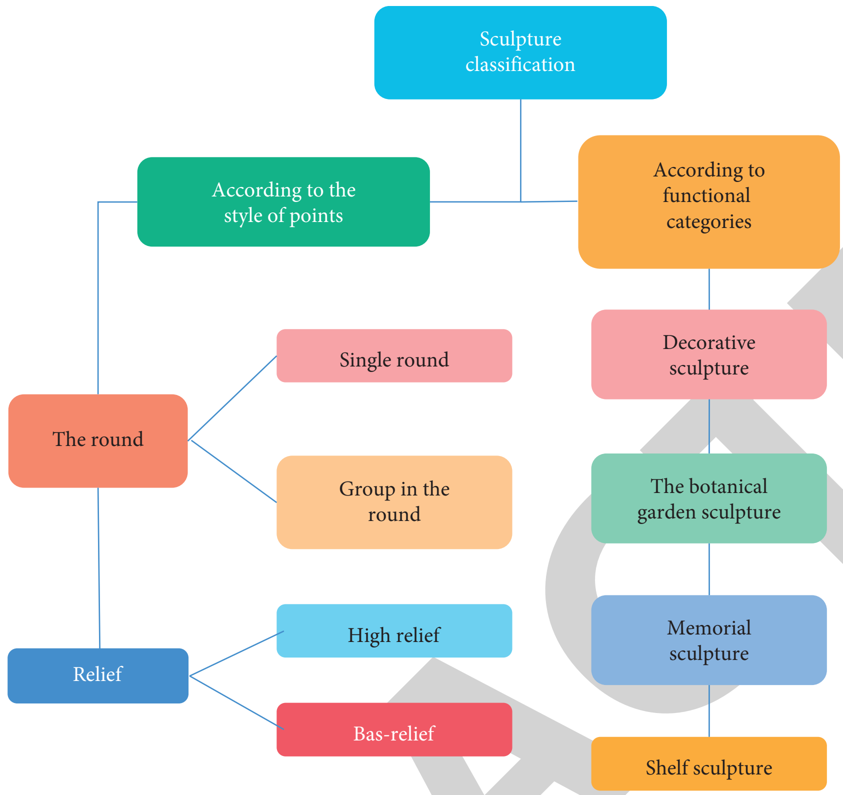

Figure 2: Basic types of sculpture.

traditional model making techniques, and small sculptures can be completed independently by the creators, and large-scale sculptures require the co-operation of several professional technicians. The level of technicians is very important; if there is a mistake, the previous work in the clay sculpture stage may be for nothing. Because the work at this stage is too meticulous and requires a lot of time, it is easy to cause the problem of an excessively long production cycle.

(7) After the reproduction is completed, wait for the work to air dry and then manually knock out the mold to take out the sculpture. At this time, the sculpture is already a semifinished product, and the surface needs to be treated manually: grinding, repairing, and polishing. Finally, the artistic creators will color the work according to the design requirements.

(8) Transport to site for installation. The overall process is shown in Figure 3

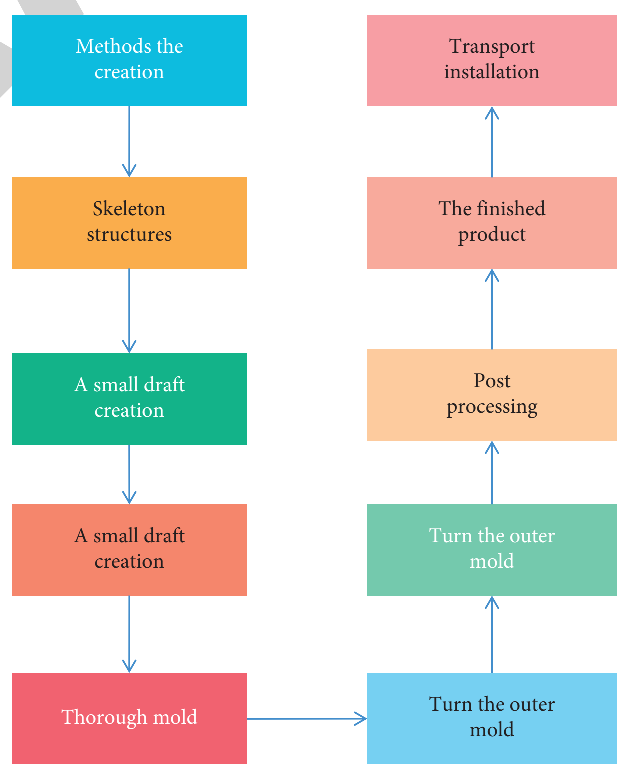

Figure 3: Flowchart of traditional sculpture production.

3.3. Development Status of 3D Printing and Digital Technology in Ceramic Sculpture

3.3.1. Development Status of 3D Printing Technology. 3D printing technology first appeared in the mid-to-late 1980s, invented by the Massachusetts Institute of Technology, later transferred to the 3M company in the United States, and developed the first 3D printing equipment in 1986. At that time, the application and popularity of this technology in the industry was slow, but it already had a prototype, and the comparison with future commercial applications was inseparable. After entering the new century, 3D printing technology has gradually matured and perfected and has developed rapidly. The data shows that the global market value of 3D printing in 2012 was 2 billion US dollars, a year-on-year increase of 29%, and the market demand increased by 25% year-on-year. The U.S. accounted for 38 percent of that, and about 10 percent came from China. As shown in Figure 4, we can more intuitively understand the changes in the size of the global 3D printing market, showing an upward trend. In 2012, the British "Economics" magazine published an article "3D printing promotes the third industrial revolution." It has attracted the attention of the whole world and has caused heated discussions in the world [17]. In terms of technical equipment, Zcop developed the first color 3D printer in 2005. In 2012, Scottish experts and scholars used 3D printers and biological materials to process human liver tissue. In 2014, the International Space Organization (ISS) deployed the first 3D printer, and workers were able to print their own daily necessities and machine parts as needed. In the past few years, the application and popularization of 3D printing technology were on the rise, and it has had a significant impact on traditional industries.

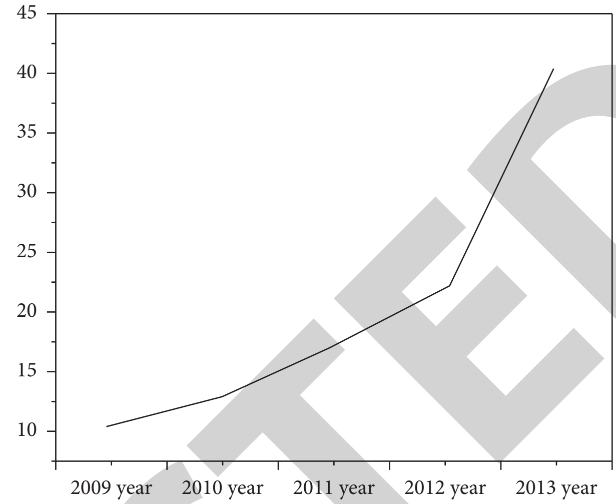

Figure 4: Growth rate of global 3D printing market size.

3.4. Application and Embodiment of 3D Technology in Contemporary Ceramic Sculpture Design. The use of digital technology in the development of ceramic sculpture is relatively late, and 3D technology is also an auxiliary technology that has gradually begun to flourish in recent years. At first, some sculptors began to experiment with 3D digital painting and 3D modeling with the help of computers and software, so as to see the image works very close to the final product through the drawing. Compared with traditional sketching, mud drafting, and other methods, 3D digital technology and final image imaging are more direct, accurate, and beautiful and have obvious advantages compared with traditional drawing methods. The application of 3D technology in all aspects of contemporary ceramic sculpture and plastic production continues to expand. Many cities require 3D stereoscopic presentation when making sculptures and rendering effects in real scenes, even simulating different background elements, such as day, night, lighting changes, and surrounding scenery, to add to the dynamism of the final sculpture. The design and production of traditional ceramic sculptures may consume a lot of manpower, material resources, and financial resources, but the results are very small. 3D digital technology can not only avoid the above risks well but also add icing on the cake for sculpture works. At the same time, it can also reflect the public's demand for ceramic sculpture works to the greatest extent and give full play to the aesthetic function of ceramic sculpture in public resources. Therefore, this technique has been widely favored since it was applied in ceramic sculpture. With the in-depth application of 3D digital technology in ceramic sculpture, its value is not only a single simulation tool and provides a new idea and artistic language for ceramic sculpture designers, effectively broadening the way of diversified development of sculpture works [18]. Before 3D technology was officially put into use, the design of sculpture works could only show the effect roughly in the form of strokes. With the large-scale use of 3D technology, sculpture works can be more vividly presented in front of the designer in the early stage, which is beneficial to complete the designer's artistic conception from the perspective of tools and discretion. In addition, 3D digital technology also provides a broader experimental space for designers of ceramic sculptures with the support of virtual technology. The final effect of the sculpture works is tested before the formal construction. The sculpture material can be evaluated according to the printed 3D renderings, without the need for a physical structure. Details such as sculpture suspension can be processed through digital technology models, and the possibility of reversibility has not been designed and constructed at the same time; by inversely correcting the rendering of the effect, the final sculpture is brought to a perfect state. The limit reflects the public's demand for urban public sculpture works and gives full play to the aesthetic function of urban public sculpture in public resources. Therefore, this technology has been widely favored since it was applied in urban public sculpture in my country [19].

3.5. Efficiency and Reliability of 3D Printing and Digital Technology in Ceramic Sculpture Design. In terms of efficiency, the emergence of the combination of 3D printing and digital technology reduce the workload of designers, improve work efficiency, and free the staff from the tedious and complicated design and manufacturing process. The application of digital technology has made the difficult problems in the design of ceramic sculptures easy to solve. For repeated work that needs to copy an object, adjust the angle, scale proportionally, it can be easily solved by digital virtual reality technology. In the virtual environment, the designer can modify and design the work in an all-round way; it further inspired the creative staff, greatly shortened the design cycle, and effectively improved the quality of the work. At the same time, compared with the complex production process of traditional ceramic sculptures, 3D printing technology is more convenient and efficient, a new work can be easily “printed,” and within a reasonable range, complex designs can be formed, no matter how precise the size can be grasped, no matter how many materials can be realized in a sculpture work [20].

In terms of reliability, 3D printing and digitization technology is programmed based on its own data. Unlike manual operations, as long as the system works properly, there will be no errors in the results. For example, in model construction, the size of the model can be accurate to a few decimal places, and then, the model data information is extracted to the 3D printing device for printing. This workflow enables the manufacture of ceramic sculptures with a level of reliability that is simply unmatched by traditional ceramic sculpture techniques [21].

4. Experimental Demonstration Analysis

The experimental demonstration analysis adopts the method of comparative experiment and selects the ceramic sculpture in the product as the research object of this experiment, using ANSYS ICEMCFD simulation software to simulate the design of ceramic sculpture, in order to verify the effectiveness of the ceramic sculpture design method based on 3D printing technology in this study [22]. The ceramic sculpture design method studied in this study is recorded as the experimental group A. The two traditional ceramic sculpture design methods were recorded as experimental group B and experimental group C, respectively. The ceramic sculpture design parameters, dimensional measurement tools, and calculation formulas were determined, and the effects, dimensional errors, and precision errors of the three groups of design methods were compared.

4.1. Experiment Preparation. Based on this experiment, the selected experimental object is ceramic sculpture. There are many complicated patterns in the ceramic sculpture, the overall shape is generous and beautiful, the details are exquisite, and the workmanship is fine, which can meet the needs of this experiment. Using ANSYS ICEMCFD simulation software, as the design software of three groups of methods, after completing the ceramic sculpture design, its running environment in the computer is shown in Table 1.

Table 1: Simulation software operating environment.

Operating environment	Configure	Parameter
Hardware environment	CPU	Intel Core i5-9400
	Frequency	2.90 GHz
	printer	3D printer
Software environment	Number of digits	64 bit
	Analog software voice	APDL
	3D printer control software	3D printer

Based on the experimental parameters, the ceramic thickness was set to 6 mm, and the overall height was set to 300 mm. Set the printing speed device of the 3D printer to 40 mm/s, the layer thickness (the thickness of each layer of entities printed) is 0.2 mm, the nozzle temperature of the printer is 210–240°C, and the printing filling rate is 100% and is a solid pattern When the print fill rate is 0%, it is a hollow pattern. Based on the experimental parameters of the previously mentioned equipment, the design effects of the three groups of methods were compared [23].

4.2. Experimental Results

4.2.1. Comparison of Design Effects. Based on the experimental environment, experimental objects, and experimental parameters set up in this experiment, using three groups of methods, the ceramic sculpture design was completed in the ANSYS ICEMCFD simulation software, and the effect of the ceramic sculptures designed by the three groups of methods was compared. The ceramic sculpture designed by experimental group B has obvious break marks in the pattern on the back, which affects the overall appearance. Although the patterns on the ceramic sculptures designed by experimental group C are intact, the overall design has a strong sense of roughness and has not reflected the fineness and roundness of ceramic sculptures. The ceramic sculptures designed by experimental group A have complete patterns, rounded overall, and no roughness. It can be seen that because of the design method of ceramic sculpture in this study, the designed ceramic sculpture has high pattern definition and low roughness, which is consistent with the effect of the finished product [24].

4.2.2. Measurement Size Error. Based on the results of the first set of experiments, a second set of experiments was carried out to measure three sets of methods. The result of designing the ceramic sculpture is to establish a coordinate system (x, y, z) with the connection point of the back and seat surface of the ceramic sculpture as the center, as shown in Figure 5.

Along the three directions of x-axis, y-axis, and z-axis, a universal dimension measuring instrument, vernier caliper, measure the size of the ceramic sculpture designed by three methods and the actual size of the ceramic sculpture and record the dimensions in three directions. In order to ensure the rigor of the experiment, the dimensions of the ceramic sculptures designed by each group of methods are in three directions, measure the size of the ceramic sculpture 10 times, and calculate the relative error of the ceramic sculpture designed by the three groups of design methods and the actual product of the ceramic sculpture in three directions. The measurement results are shown in Figure 6.

As can be seen from Figure 6, the ceramic sculptures designed by experimental group B have the largest relative errors in the three directions. The relative error in the three directions of the ceramic sculptures in the experimental group C is smaller than that in the experimental group B but

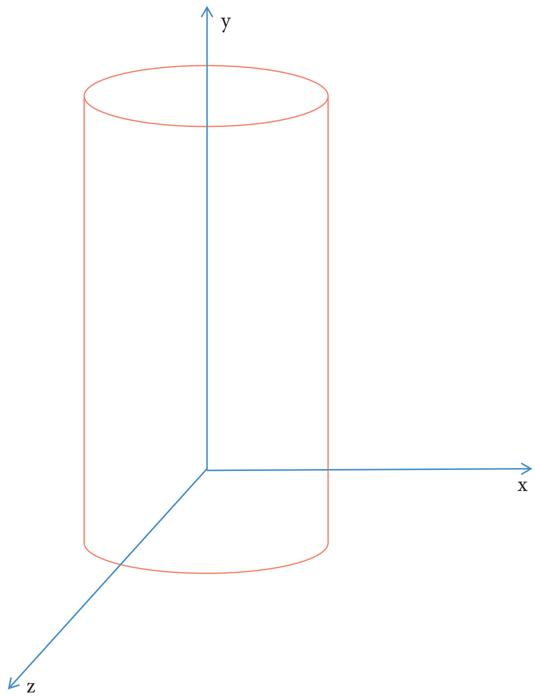

Figure 5: Ceramic sculpture coordinate system.

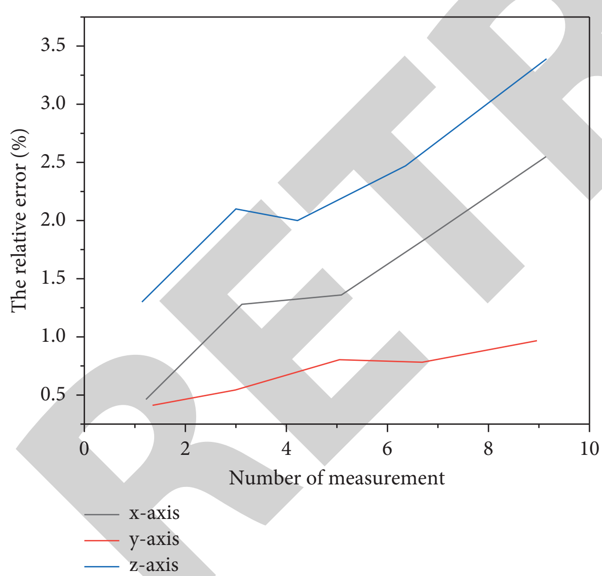

Figure 6: Dimensional errors in three horizontal directions.

is still more than 2.6%. In only the experimental group A, the designed ceramic sculpture, the relative error in the three directions has always been less than 1.0%. From this, it can be seen that the ceramic sculpture designed by the ceramic sculpture design method of this research has small relative dimensional errors in the three directions of x-axis, y-axis, and z-axis and will not affect the dimensional accuracy of the ceramic sculpture [25].

Table 2: Surface relative accuracy error (mm^2).

Testing frequency	Experiment group a	Experiment group B	Experiment group C
1	0.624	1.521	3.380
2	0.656	2.149	2.715
3	0.343	1.934	2.660
4	0.354	2.305	2.547
5	0.537	1.463	2.947
6	0.565	2.457	3.445
Mean	0.512	1.947	2.970

4.2.3. Measuring Surface Accuracy Error. Based on the first set of experimental results, a virtual design drawing is obtained, and the surface accuracy of the ceramic sculpture designed by the three groups of methods is measured. The calculation formula (1) is as follows:

$$\Delta S = \frac{1}{2}\mu \cdot h^2. \quad (1)$$

In formula (1), ΔS represents the surface accuracy error of ceramic sculpture (mm2); μ represents the dimensionless scale factor; h represents the layer height (mm) that the ceramic sculpture needs to be processed.

The general dimension measuring instrument, vernier caliper, was used to measure the area, processing layer height, and total height of the ceramic sculpture, which were used as the calculation data of this group of experiments. In order to ensure the rigor of the experimental results, each group of data was measured six times, and the relative accuracy results of the three groups of ceramic sculpture surfaces were calculated according to formula (1), and the average value of the six measurement accuracy errors was obtained. The experimental results are shown in Table 2.

It can be seen from Table 2 that the surface accuracy error of the ceramic sculpture designed by the experimental group C is the largest. Compared with the mean value of surface accuracy error of experimental group A, it is 2.458 mm^2 higher, and it is 0.999 mm^2 higher than the mean value of surface accuracy error of experimental group B. The surface precision error of the ceramic sculpture designed by the experimental group B is smaller than that of the experimental group C, but it is 1.459 mm^2 higher than the average surface precision error of the experimental group A. It can be seen that, in the ceramic sculpture designed by the ceramic sculpture design method of this study, the surface accuracy error is small and maintained below 1.0 mm^2, and the surface roughness is low. Based on the three sets of experimental results, it can be seen that, in the ceramic sculptures designed by the ceramic sculpture design method of this study, the pattern has a high definition, and the surface accuracy error is small. In the three directions of x-axis, y-axis, and z-axis, the resulting relative size error is small, and the error is maintained below 1.0, which is consistent with the effect of the finished product. Therefore, the surface roughness of the ceramic sculpture designed this time is low, which will not affect the dimensional accuracy of the ceramic sculpture.

5. Conclusion

To sum up, in the ceramic sculpture designed by the design method of this research, the pattern has a high definition, and the surface accuracy error is small. In the three directions of x-axis, y-axis, and z-axis, the resulting relative size error is small, and the error is maintained below 1.0, which is consistent with the effect of the finished product. Therefore, the surface roughness of the ceramic sculpture designed this time is low, which will not affect the dimensional accuracy of the ceramic sculpture. Make full use of 3D printing technology to design ceramic sculpture shapes, print ceramic sculpture patterns, and improve the design accuracy of ceramic sculptures. However, in the design method of ceramic sculpture in this study, the influence of the product design raw materials selected in the design of ceramic sculptures on the product design results has not been considered. Therefore, in future research, it is necessary to further study the design method of ceramic sculpture, consider the material properties of the product, improve the equivalent stress of ceramic sculpture design, and further improve the practicability of ceramic sculpture.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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